UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/878,259	06/11/2001	Peter Dreyer	70139	2978

7590 09/12/2003

McGLEW AND TUTTLE, P.C.
SCARBOROUGH STATION
SCARBOROUGH, NY 10510-0827

EXAMINER
LEE, SHUN K

ART UNIT	PAPER NUMBER
2878	

DATE MAILED: 09/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/878,259	DREYER ET AL.	
	Examiner	Art Unit	
	Shun Lee	2878	

-- The MAILING DATE of this communication appears on the cover sh et with the correspondenc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 June 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers filed under 35 U.S.C. 119 (a)-(d) based on an application filed in Germany on 27 September 2000. Applicant has not complied with the requirements of 37 CFR 1.63(c), since the oath, declaration or application data sheet does not appear to properly specifying the application number (*i.e.*, the declaration specifies "DE 100 47 728.3-***42***" whereas the certified copy appears as "100 47 728.3"). A new oath, declaration or application data sheet is required in the body of which the present application should be identified by application number and filing date.

Claim Objections

2. Claims 1, 7, 11, and 12 are objected to because of the following informalities:

(a) in claim 1, "a second radiation source" on line 8 should probably be --a second infrared optical radiation source-- (in order to provide antecedent basis for "the second infrared optical radiation source" in line 3 of claim 2, in line 3 of claim 3, and in line 3 of claim 4);

(b) in claim 7, "second radiation source" on line 4 should probably be --a second infrared optical radiation source-- (in order to provide antecedent basis for "the second infrared optical radiation source" in line 3 of claim 8, in line 3 of claim 9, and in line 3 of claim 10);

(c) in claim 11, " and" on line 15 should probably be deleted and -- and-- should probably be added at the end of line 18; and

(d) in claim 12, "the first wavelength range" on line 3 should probably be --the second wavelength range--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 12 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites the limitation "the multispectral detector" in line 4. The antecedent basis for this limitation in the claim is unclear (*i.e.*, is the antecedent basis "the first multispectral detector" or "the second multispectral detector").

Claim 13 recites the limitation "the wavelength range" in line 3. The antecedent basis for the limitation "the wavelength range" in the claim is unclear (*i.e.*, is the antecedent basis "the first wavelength range" or "the second wavelength range"). Claim 13 also recites the limitation "the multispectral detector" in line 4. The antecedent basis for the limitation "the multispectral detector" in the claim is unclear (*i.e.*, is the antecedent basis "the first multispectral detector" or "the second multispectral detector").

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Dreyer (US 5,942,755).

In regard to claims **1, 5**, and **7**, Dreyer discloses (column 1, line 28 to column 2, line 30; Fig.) an infrared optical gas analyzer, comprising:

(a) an infrared optical radiation source arrangement (1, 2, 3) comprises a first (1) and a second (2) infrared optical radiation source;

(b) a first multispectral detector (5, 10);

(c) a second multispectral detector (5, 11); and

(d) a cuvette (4) containing the gas mixture to be measured, said infrared optical radiation source (1, 2, 3) being positioned such that the radiation emitted in a first wavelength range (*e.g.*, 7.5 to 14 μm; column 1, lines 47-50) reaches the first multispectral detector (5, 10) through the interior space of the cuvette (4) and radiation emitted in a second wavelength range (*e.g.*, 2.5 to 4.3 μm; column 1, lines 47-50) reaches the second multispectral detector (5, 11) through the interior space of the cuvette (4), said first wavelength range and said second wavelength range being selected such that they will be different from one another (*e.g.*, 2.5 to 4.3 μm and 7.5 to 14 μm; column 1, lines 47-50).

In regard to claim **2** (which is dependent on claim 1) and claim **8** (which is dependent on claim 7), Dreyer also discloses (see Fig.) that the radiation emitted by the first infrared optical radiation source (1) extends in parallel to the radiation emitted by the second infrared optical radiation source (2) and it travels over a path of equal length.

In regard to claim **6** which is dependent on claim 5, Dreyer also discloses (see Fig.) that said infrared optical radiation source arrangement (1, 2, 3) includes a dichroic beam splitter (3) wherein radiation emitted in the first wavelength range (*e.g.*, 7.5 to 14 μm; column 1, lines 47-50) passes unhindered through said dichroic beam splitter (3) and reaches the first multispectral detector (5, 10) and the radiation emitted in the second wavelength range (*e.g.*, 2.5 to 4.3 μm; column 1, lines 47-50) is reflected by the dichroic beam splitter (3) and reaches the second multispectral detector (5, 11) through the interior space of the cuvette (4).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 3, 4, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dreyer (US 5,942,755) in view of Miyazaki *et al.* (US 5,689,114) and Huiku (US 6,147,351).

In regard to claims **3** and **4** (which are dependent on claim 1) and claims **9** and **10** (which are dependent on claim 7), the analyzer of Dreyer lacks that the radiation emitted by the first and second infrared optical radiation source travels over a path of different length (*e.g.*, paths at right angle to each other). However, unequal path lengths are well known in the art. For example, Miyazaki *et al.* teach (column 3, lines 48-56; column 4, lines 52-63) that unequal path lengths allow the concentration of various ingredients in the sample gas to be measured with high sensitivity at that longitudinal and lateral (*i.e.*, orthogonal) paths allow rapid introduction and stabilization of a gas sample in a sample cell. Therefore it would have been obvious to one having ordinary skill in the art to provide unequal path lengths (*e.g.*, orthogonal paths) in the analyzer of Dreyer, in order to rapidly introduce and stabilize a gas sample in the sample cell so as to obtain high sensitivity measurements of various gas sample ingredient concentrations.

10. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dreyer (US 5,942,755) in view of Eckstrom (US 5,747,809).

In regard to claim **11**, Dreyer is applied as in claims 1, 5, and 7 above. Dreyer also discloses (column 1, line 28 to column 2, line 30; Fig.) that the process for determining gas concentrations with an infrared optical gas analyzer further comprising the steps of:

determining the concentrations of a first group of gases (*e.g.*, gaseous anesthetics; column 1, lines 47-50) contained in the gas mixture from the signals of the radiation in the first wavelength range (*e.g.*, 7.5 to 14 μm; column 1, lines 47-57), which are received by the first multispectral detector (5, 10); and

determining the concentrations of a second group of gases (*e.g.*, CO_2 and N_2O; column 1, lines 47-57) contained in the gas mixture from the signals of the radiation in the second wavelength range (*e.g.*, 2.5 to 4.3 μm; column 1, lines 47-50), which are received by the second multispectral detector (5, 11).

While Dreyer also discloses (column 3, line 6 to column 4, line 6) that gas concentrations determinations can comprise calculating from the signals of the radiation which are received by the multispectral detectors (*e.g.*, the ratio of two reference signals), the process of Dreyer lacks an explicit description of the gas concentrations determinations comprise an evaluating and control unit for calculating values for the gas concentrations. However, evaluating and control units for calculating values for the gas concentrations are well known in the art. For example, Eckstrom teaches (column 10, lines 40-45) that standard methods of computer (*i.e.*, evaluating and control unit) analysis are used to calculating values for the gas concentrations. Therefore it would have been obvious to one having ordinary skill in the art to provide a conventional computer (*i.e.*, evaluating and control unit) in the process of Dreyer, in order to determine gas sample ingredient concentrations using standard computer analysis methods.

In regard to claims **12** and **13** which are dependent on claim 11 in so far as understood, the process of Dreyer lacks that in the first (or second) gas group concentration calculations, the evaluating and control unit compensates the multispectral detector cross sensitivities to the second (or first) gas group by using the second (or first) wavelength range radiation signals for the correction of the first (or second) wavelength range radiation signals. Eckstrom teaches (column 10, line 46 to column 11, line36) that in the first (or second) gas group concentration calculations, the evaluating and control unit can automatically compensate the multispectral detector cross sensitivities to the second (or first) gas group by using the second (or first) wavelength range radiation signals for the correction of the first (or second) wavelength range radiation signals (*i.e.*, crosstalk corrections). Therefore it would have been obvious to one having ordinary skill in the art to provide a conventional computer in the process of Dreyer, in order to determine gas sample ingredient concentrations using standard computer analysis methods (*i.e.*, including crosstalk corrections).

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shun Lee whose telephone number is (703) 308-4860. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (703) 308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

CONSTANTINE HANNAHER
PRIMARY EXAMINER
GROUP ART UNIT 2878

SL
August 28, 2003